PATENTS
Serial No.: 10/657,938
Confirmation No.: 1614
Attorney Docket No. FOM-139.01

REMARKS

In response to the Office Action dated November 23, 2005, Applicants respectfully request reconsideration. To further prosecution of this application, each of the issues raised in the Office Action is addressed herein.

Claims 1 to 7, 9 to 17, 21 to 23, and 27 to 53 are presently pending in this application. Claims 1, 23, 30, 31, 32, and 49 are independent claims. By the amendments herein, Applicants have renumbered claims 40 to 53 and amended claims 45 and 48 to 53 to correct a minor claim numbering error. Applicants have canceled claims 25 and 26, and amended claims 1, 5, 9, 10, 12, 30, 32, and 47 to correct minor antecedent basis errors. Applicants have also amended claims 11, 23 and 31 to more clearly define the nature of Applicants' contribution to the art. No new matter has been added by these amendments. This application is now believed to be in allowable condition.

A. Double Patenting Rejections

On page 3 of the Office Action, claim 30 was provisionally rejected on the ground of nonstatutory double patenting over claims in copending U.S. Patent Application No. 10/658,583. But that application is abandoned, so that rejection should be withdrawn.

On page 4 of the Office Action, previously numbered claims 32 to 56, which are now numbered claims 32 to 53, were provisionally rejected on the ground of nonstatutory double patenting over claims in previously copending U.S. Patent Application No. 10/658,005. But that application is abandoned, so that rejection should be withdrawn.

B. 35 U.S.C. § 103 Rejections

On page 4 of the Office Action, claims 23, 25, 27, and 31 were rejected under 35 U.S.C. § 103 as being allegedly unpatentable over U.S. Patent No. 5,910,188 to Resnick (hereinafter "Resnick") in view of U.S. Patent No. 6,023,970 to Blaine (hereinafter "Blaine"). On page 7 of the Office Action, claim 26 was rejected under 35 U.S.C. § 103 as being allegedly unpatentable over Resnick in view of Blaine and U.S. Patent No. 6,801,157

to Haynes. On page 8 of the Office Action, claim 28 was rejected under 35 U.S.C. § 103 as being allegedly unpatentable over Resnick in view of Blaine and U.S. Patent No. 6,137,282 to Mácke, Sr. et al. Finally, on page 9 of the Office Action, claim 29 was rejected under 35 U.S.C. § 103 as being allegedly unpatentable over Resnick in view of Blaine and U.S. Patent No. 6,229,476 to Lutke. Applicants respectfully traverse these rejections.

1. Independent Claim 23 and Associated Dependents

Applicants' claim 23, as amended, recites, in part, evaluating a time delay of a second electromagnetic signal relative to a first electromagnetic signal to determine a level of a substance.

Applicants' claim 23 was improperly rejected as obvious over Resnick in view of Blaine. First, the art disclosed in Blaine is non-analogous to Applicant's disclosure. Moreover, Blaine teaches away from any combination with Resnick.

In stark contrast to Applicants' disclosure, which specifically recites determining a level of a substance by evaluating a time delay, Blaine discloses a sensor for determining a presence of a substance at a given level simply based on the presence of or amount of reflected or resonated energy (Blaine, Column 3, Lines 15 to 45). Nowhere does Blaine disclose or suggest measuring a time delay between two electromagnetic signals for any reason. In fact, Blaine specifically describes not measuring a time delay: "unlike an acoustic sensor where timing between emission of a broadcast signal into a container and receipt of a return signal to the antenna is a critical parameter which indicates the presence of a fluid, it is simply the presence or absence (or degree thereof) of reflected electromagnetic energy which is indicative of fluid in a container (Blaine, Column 6, Lines 37 to 42)." This sentence makes clear that the field of the Blaine disclosure is not time domain reflectometry, which evaluates a time delay between a first electromagnetic signal and a second electromagnetic signal to determine a level of a substance, as in Applicants' disclosure, and not the presence or amount of energy, as in the disclosure of Blaine. Since the invention described in Blaine is non-analogous to Applicants' disclosure, the reliance on Blaine in rejecting Applicants' claim 23 is improper.

Furthermore, unlike Blaine, Resnick discloses performing time domain reflectometry wherein sensors are put in contact with a substance to be measured (Resnick, Fig. 1; Column 2, Lines 24 to 27). Blaine, on the other hand, specifically teaches away from a combination with any device wherein a sensor is put in contact with the substance to be measured. Specifically, the disclosure of Blaine repeatedly refers to the invention disclosed therein as a "noninvasive" liquid level indicator, and the disclosure recites that, unlike invasive systems, such as the one in Resnick, the risk of contamination is not increased when the invention of Blain is used (Blaine, Column 1, Lines 45 to 47). Furthermore, Blaine describes that the system it discloses is mounted on an exterior wall of a container (Blaine, Column 4, Lines 45 to 50). This is in stark contrast to Resnick which clearly shows sensors mounted within a container (Resnick, Fig. 1). Since Resnick teaches an invasive sensor and Blaine specifically teaches away from use of invasive sensors, the combination of Resnick and Blaine is improper.

In any event, the Office Action, on page 5, states that Resnick does not disclose: "receiving, from the at least one second conductive element, a second electromagnetic signal induced by the first electromagnetic signal driven along the at least one first conductive element, the second electromagnetic signal being coupled to the at least one second conductive element in response to the at least one dielectric mismatch boundary." This feature of Applicants' unamended claim 23 was not an obvious addition to the disclosure of Resnick, because, even if Blaine and Resnick were otherwise properly combinable, nothing in either Blaine or Resnick suggests that adding this feature to the disclosure of Resnick would be successful or provide any advantages. Specifically, neither Resnick nor Blaine discloses or suggests the advantages discussed in Applicants' disclosure (Paragraphs [0031] and [0032]). If, as the Office Action contends, combining Resnick and Blaine had been obvious, someone would have previously performed the methods or constructed the systems disclosed by Applicants to exploit these advantages.

As discussed above, the use of Blaine in rejecting Applicants' claim 23 is improper since Blaine is non-analogous to Applicants' disclosure; moreover, since Blaine teaches

away from a combination with Resnick it would be improper to combine Resnick with Blaine even if the reliance on Blaine were proper. Finally, it is clear that the proposed combination of Resnick and Blaine was not obvious, because the Office Action cites no such combination despite the numerous advantages associated with it. For at least these reasons, the rejection of Applicants' claim 23 is improper. Therefore, Applicants respectfully request that the rejection of claim 23 be withdrawn. Furthermore, Applicants' claims 27 to 29 depend from claim 23. Based at least upon this dependency, the rejections of these claims are also improper. Applicants respectfully request that the rejections of dependent claims 27 to 29 also be withdrawn.

2. Independent Claim 31

Applicants' claim 31, as amended, recites, in part, a receiver for receiving a second electromagnetic signal from at least one second conductive element, the received electromagnetic signal being coupled to the at least one second conductive element in response to at least one dielectric mismatch boundary. Applicants' claim 31 further recites, in part, a processor for evaluating a time delay of the second electromagnetic signal relative to a first electromagnetic signal to determine a level of a substance.

The examiner rejected Applicants' claim 31 defining subject matter as obvious over Resnick in view of Blaine. Applicants respectfully request that the examiner withdraw this rejection; as discussed above with respect to Applicants' claim 23, Blaine discloses art that is non-analogous to Applicants' disclosure. Moreover, Blaine teaches away from any combination with Resnick. And, it is clear that the combination of Resnick and Blaine proposed in the Office Action was not obvious because the Office Action cites no such combination despite the numerous advantages associated with it. For at least these reasons, the rejection of Applicants' claim 31 should be withdrawn.

C. Allowed Subject Matter

On page 10 of the Office Action, claims 1 to 7, 9 to 17, 19, 21 and 22 are identified as allowable. Applicants agree with this characterization of these claims.

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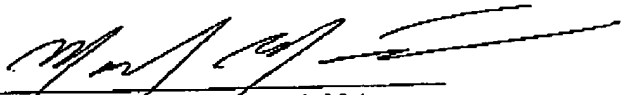
D. Conclusion

It is respectfully believed that all of the rejections, objections, or comments set forth in the Office Action have been addressed. However, the absence of a reply to a specific rejection, objection, or comment set forth in the Office Action does not signify agreement with or concession of that rejection, objection, or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Furthermore, nothing in this paper should be construed as an intent to concede any issue with regard to any claim.

In view of the foregoing remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes after this amendment that the application is not in condition for allowance, the Examiner is requested to call the Applicants' representative at the telephone number indicated below to discuss any outstanding issues relating to the allowability of the application.

Respectfully submitted,



Date: May 23, 2006
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